

In the Claims

The claims currently pending in the application are as follows:

1. (Currently Amended) An optical wave-guide absorption cell, comprising:
a first wave-guide;
a holey wave-guide ~~filled with a known selective absorption medium, wherein a first~~
terminus of said holey wave-guide ~~is coupled to a first terminus of said first wave-guide, said~~
holey wave-guide comprising:
 ~~a primary core;~~
 a secondary core ~~surrounding said primary core and comprising a plurality of~~
 ~~comprising~~ voids filled with ~~said a~~ known selective absorption medium; and
 a cladding region surrounding said ~~secondary core, wherein said cladding region~~
 ~~has and having~~ a lower index of refraction than said ~~primary core and said secondary~~
 core; and
a second wave-guide, wherein a first terminus of said second wave-guide is coupled to a
second terminus of said holey wave-guide.
2. (Original) The optical wave-guide absorption cell according to Claim 1, wherein said
first terminus of said holey wave-guide is coupled to said first terminus of said first wave-guide
utilizing a fusion splice.
3. (Original) The optical wave-guide absorption cell according to Claim 1, wherein said
first terminus of said holey wave-guide is coupled to said first terminus of said first wave-guide
utilizing a light transmitting adhesive.
4. (cancelled) .
5. (currently amended) The optical wave-guide absorption cell according to Claim 4,
wherein said holey wave-guide further comprises a fill hole ~~formed in said fiber optic absorption~~

~~cell primary core, wherein said fill hole is an opening into said primary core plurality~~
~~of extending radially to said voids in said core at a location~~ that is not at said first terminus of said
holey wave-guide and is not at said second terminus of said holey wave-guide, said fill hole
adapted to introduce said known selective absorption medium into said ~~plurality of voids~~.

6. (Original) The optical wave-guide absorption cell according to Claim 1, wherein:
said first wave-guide comprises a first fiber optic cable;
said holey wave-guide comprises a holey fiber optic cable; and
said second wave-guide comprises a second fiber optic cable.

7. (Currently Amended) A fiber optic absorption cell comprising a holey fiber optic
cable adapted for propagating an optical signal, ~~wherein said holey fiber optic cable~~
~~comprises comprising:~~

~~a primary core;~~
~~a secondary core surrounding that includes said primary core;~~
~~a core defining plurality of voids formed in said secondary primary core;~~
a known selective absorption medium filling said ~~plurality of voids~~;
a cladding region surrounding said ~~secondary core, wherein said cladding region has and~~
~~having~~ a lower index of refraction than said ~~primary core and said secondary core~~; and
a fill hole ~~formed in said fiber optic absorption cell primary core, wherein said fill hole is~~
~~an opening into~~extending radially to said primary core plurality of voids at a location that is not
at a terminus of said holey fiber optic cable, said fill hole adapted to introduce said known
selective absorption medium into said ~~plurality of voids~~.

8. (Currently Amended) The fiber optic absorption cell according to Claim 7, wherein
said holey fiber optic cable further comprises an evacuation hole ~~formed in said fiber optic~~
~~absorption cell primary core, wherein said evacuation hole is an opening into~~extending radially
to said primary core plurality of voids at a location that is not at a terminus of said holey fiber
optic cable, said evacuation hole adapted to introduce said known selective absorption medium

into said ~~plurality of~~ voids.

9. (Original) The fiber optic absorption cell according to Claim 7, further comprising a first fiber optic cable attached to a first terminus of said holey fiber optic cable, adapted to couple said optical signal from a light source to said holey fiber optic cable.

10. (currently amended) The fiber optic absorption cell according to Claim ~~7~~8, further comprising a second fiber optic cable attached to a second terminus of said holey fiber optic cable, adapted to couple said optical signal from said holey fiber optic cable to a detector.

11 through 49. (Cancelled)